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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,819	07/01/2003	Toshihisa Yamamoto	450100-4681.2	3004

7590 04/17/2007	EXAMINER
FROMMER LAWRENCE & HAUG, LLP. 10TH FLOOR 745 FIFTH AVENUE NEW YORK, NY 10151	HANNETT, JAMES M

ART UNIT	PAPER NUMBER
2622	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>01 July 2003</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>39-48</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>39 and 44</u> is/are rejected.

7)☒ Claim(s) <u>40-43 and 45-48</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>01 July 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>7/1/2003</u>.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 7/1/2003 has been considered

by the examiner.

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The title of the invention is not descriptive. A new title is required that is clearly

indicative of the invention to which the claims are directed.

The following title is suggested: camera image interpolation apparatus.

Claim Objections

Claim 42 is objected to because of the following informalities: Line 6 states "which .s

lope" this is clearly a typographical error and should be changed to "which slope". Appropriate

correction is required.

Claim 44 is objected to because of the following informalities: Line 11 states "data-" this

is clearly a typographical error and should be changed to "data". Appropriate correction is

required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1:   Claims 39 and 44 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN

5,555,023 Maenaka et al.

2:   As for Claim 39, Maenaka et al depicts in Figures (1 and 2) and teachers on Column 2,

Lines (1-18 and 58-67) on Column 4, Lines 1-10 and on Column 5, Lines 9-30 A camera signal

processing apparatus comprising: an interpolated pixel data generating means (Maenaka et al

teaches circuits 261-264) perform interpolation in both the vertical and horizontal directions). for

interpolating pixel data in at least two directions (horizontal and vertical) based on a position of

said pixel data and/or pixel data around said position (Figure 9 teaches that the pixel data used

for interpolation is a group of pixels around a center pixel), said pixel data being generated based

on an imaging signal coming from a solid-state image sensor (1) in which an imaging light enters

through a color filter having a different spectral characteristic for each pixel, thereby separately

generating interpolated pixel data in said-at least two directions (horizontal and vertical); a

correlation detecting means (261-264) for detecting a correlation value indicative of a degree of

correlation in each of said at least two directions (horizontal and vertical) of said interpolated

pixel data generated by said interpolated pixel data generating means (261-264 perform

interpolation initially prior to the calculation of the correlation values); Maenaka et al teaches an

emphasis/deemphasis means (26 and 27) for performing control whether said interpolated pixel

data is to be generated by emphasizing the correlation. The examiner views the mixers (28 and

29) as an emphasizing function since the magnitude of the output correlation coefficients from (22 and 23) with be changed based on the outputted coefficients (K1 and K2)). Furthermore, this emphasis (28 and 29) is depending on said correlation value (output of 22 and 23) detected by said correlation detecting means (261-264) in each of said at least two directions (horizontal and vertical); Maenaka et al teaches a weighting means (27-29) for weighting (28 and 29) said interpolated pixel data in each of said at least two directions (horizontal and vertical) generated by said interpolated pixel data generating means (261-264) with the correlation value (K1 and K2) controlled by said emphasis/deemphasis means (26 and 27) in each of said at least two directions (horizontal and vertical) and adding together (24) the weighted interpolated pixel data in all of said at least two directions (output of 28 and 29) to generate interpolated pixel data; and an image generating means (25) for generating an image based on said interpolated pixel data weighted (28 and 29) by said weighting means (27-29).

3:      In regards top Claim 44, Maenaka et al depicts in Figures (1 and 2) and teachers on Column 2, Lines (1-18 and 58-67) on Column 4, Lines 1-10 and on Column 5, Lines 9-30 A camera signal processing apparatus comprising: an interpolated pixel data generating means (Maenaka et al teaches circuits 261-264) perform interpolation in both the vertical and horizontal directions). for interpolating pixel data in at least two directions (horizontal and vertical) based on a position of said pixel data and/or pixel data around said position (Figure 9 teaches that the pixel data used for interpolation is a group of pixels around a center pixel), said pixel data being generated based on an imaging signal coming from a solid-state image sensor (1) in which an imaging light enters through a color filter having a different spectral characteristic for each pixel, thereby separately generating interpolated pixel data in said-at least two directions (horizontal

and vertical); a correlation detecting means (261-264) for detecting a correlation value indicative

of a degree of correlation in each of said at least two directions (horizontal and vertical) of said

interpolated pixel data generated by said interpolated pixel data generating means (261-264

perform interpolation initially prior to the calculation of the correlation values); Maenaka et al

teaches an emphasis/deemphasis means (26 and 27) for performing control whether said

interpolated pixel data is to be generated by emphasizing the correlation. The examiner views the

mixers (28 and 29) as an emphasizing function since the magnitude of the output correlation

coefficients from (22 and 23) with be changed based on the outputted coefficients (K1 and K2)).

Furthermore, this emphasis (28 and 29) is depending on said correlation value (output of 22 and

23) detected by said correlation detecting means (261-264) in each of said at least two directions

(horizontal and vertical); Maenaka et al teaches a weighting means (27-29) for weighting (28 and

29) said interpolated pixel data in each of said at least two directions (horizontal and vertical)

generated by said interpolated pixel data generating means (261-264) with the correlation value

(K1 and K2) controlled by said emphasis/deemphasis means (26 and 27) in each of said at least

two directions (horizontal and vertical) and adding together (24) the weighted interpolated pixel

data in all of said at least two directions (output of 28 and 29) to generate interpolated pixel data;

and an image generating means (25) for generating an image based on said interpolated pixel

data weighted (28 and 29) by said weighting means (27-29).

Allowable Subject Matter

4:      Claims 40-43 and 45-48 are objected to as being dependent upon a rejected base claim,

but would be allowable if rewritten in independent form including all of the limitations of the

base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 2003/0133034 Takahashi teaches the use of a camera system performing image processing; USPN 5,734,424 Sasaki teaches the use of an image processing apparatus using a weighted interpolation method; USPN 6,018,363 Horii teaches a signal processing method as depicted in Figure 4.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Hannett whose telephone number is 571-272-7309. The examiner can normally be reached on 8:00 am to 5:00 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on 571-272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James M. Hannett
Examiner
Art Unit 2622

JMH
April 12, 2007